



November 25, 2013

Ms. Cecilia Tapia  
Director  
Superfund Division  
**United States Environmental Protection Agency**  
Region 7  
11201 Renner Boulevard  
Lenexa, Kansas 66219

RE: Bridgeton Landfill – West Lake Landfill: Phase 1 Status Report

Dear Ms. Tapia:

On behalf of our client, Bridgeton Landfill, LLC (hereinafter Bridgeton Landfill), Feezor Engineering, Inc. (FEI) hereby submits an update to the Phase 1 Gamma Cone Penetrometer Test (GCPT) field investigation. This update was requested by EPA as a preliminary update and this is not a report anticipated by the Phase 1 Work Plan. The update contained within this correspondence and attached drawing is through Friday, November 22, 2013. Please note that because the Phase I work has not yet been completed and necessary calibration and correlation completed, this update and information is collected from field data and should be considered draft preliminary in nature.

The Phase 1 Work Plan is consistent with Environmental Protection Agency's (EPA) September 20, 2013, letter directing the investigation under the Additional Work provision of the Administrative Order on Consent for the West Lake OU-1 Superfund Site.

The project was initiated by conducting General Employee Radiological Training (GERT) on October 28, 2013. Auxier and Associates, Inc. (AAI) who is providing the radiological safety and monitoring services for the project provided the GERT and answered any worker safety and monitoring questions. On October 29, 2013, vegetation clearing was initiated by Agricycle, Inc. Prior to any vegetation clearing AAI provided an onsite health physicist who will conducted an overland gamma scan. The health physicist held the detector approximately 30 cm above the ground surface and advanced across the areas of interest in a series of straight lines at a rate of approximately one meter per second. The separation distance between the lines were approximately 1.5 meters. In all areas of vegetation clearing, no elevated overland gamma readings were detected.



Vegetation clearing proceeded from October 29, 2013 to November 18, 2013 by using a tree shear or a skid steer with a brush hog attachment. Care was taken to select paths which required a minimum amount of clearing. The tree shear was used for the majority of the clearing, while the brush hog was used in areas deemed too thick such as a thicket type vegetation. To prevent any visible dust emissions a water truck was available to water the vegetation. However, rain events and natural moisture provided sufficient wetting, and it was decided that additional watering was not needed for dust suppression and could create conditions more conducive to rutting.

Once the path was cleared, Agricycle deployed a 10 ounce per square yard non-woven geotextile, and then approximately 6-8 inches of rock aggregate was spread to advance gravel roads to each test location along the cleared alignments. The gravel path locations were surveyed and the locations are depicted on the attached drawing entitled *GCPT Status*.

As of the end of the work day on November 22, 2013 the following paths have been constructed, which should suffice for the Phase 1 investigation.

- Entrance Alignment
- Main Alignment to west fence
- Main Alignment to east fence
- Path 1 – GCPT 4-1 to GCPT 4-2
- Path 2 – GCPT 5-1 to GCPT 5-4
- Path 3 – GCPT 6-3 to PVC-36
- Path 4 – GCPT 7-2
- Path 5 – GCPT 9-2, WL-108, GCPT 9-1, and GCPT 7-1
- Path 6 – GCPT 10-2 to GCPT 10-1 to PVC-25
- Path 7 – GCPT 12 -2 to GCPT 12-1 to PVC-38 to PVC-28 to GCPT 11-2
- Path 8 – GCPT 13-1 to GCPT 13-7 (also including GCPT 13-1 to GCPT 16-1)
- Path 9 – GCPT 14-1 to GCPT 14-7
- Path 10 - GCPT 15-1 to GCPT 15-8
- Path 11 – GCPT 16-4 to GCPT 16-8
- Path 12 – Entrance Alignment west to GCPT 6-4
- Path 12B - GCPT 12-6

Approximately 4,200 feet of paths have been constructed to date. Approximately 3265 tons of rock, and approximately 400 yards of soil have been delivered to date.

ConeTec arrived on site on November 12, 2013 and, after obtaining the proper health and safety training, proceeded to conduct a GCPT sounding at the existing boring WL-111. After the AAI Health Physicist approved that the GCPT rods and the GCPT machine tracks were devoid of any radiological contamination, the GCPT rig was moved to PVC-28 and a sounding was conducted there. ConeTec was able to detect elevated gamma counts

within this boring. No PVC casing from the NRC study was found, since under the approved materials management plan over 8 feet of construction and demolition debris was placed in this area since the NRC borings were initially conducted. (As discussed below, this construction and demolition debris has proved to be an impediment with the advancement of the gamma cones along the eastern half of the OU-1, Area 1 landfill.) After the sounding at PVC-28, the AAI health physicist released the GCPT rig to proceed to the next location.

The next sounding occurred within the existing casing for PVC-25 an existing NRC boring. The September 27, 2013 *Gamma Cone Penetration Test (GCPT) Work Plan Revision 2* (hereinafter referred to as the Work Plan) listed PVC-38 as a correlation boring. However, after clearing up to this boring, it was determined that the topography would deem this location unsafe for the GCPT rig. Upon consultation with Region 7 of the USEPA, it was determined to use PVC-25, another known impacted NRC boring. This location was beyond the construction and demolition debris fill, and the existing PVC casing was found. ConeTec was able to lower their GCPT rods into this casing and again, was able to detect elevated gamma readings. After AAI scanning and release, the GCPT rig proceeded to PVC-36, another NRC PVC casing that was discovered. The GCPT rig was able to detect a slightly elevated gamma reading from this PVC casing. Having completed testing of the three known radiologically impacted borings with the GCPT rig, it was decided in the field that the GCPT technology was recording relevant gamma data. Even though statistical correlation studies and analytical sampling will be necessary in the future to provide proper correlations, the device would be used to collect raw data at the proposed sounding locations.

Soundings occurred within the OU-1 Area 1 fenced area from a general west to east progression. A summary of the raw data from the soundings is included in the attached drawing entitled *GCPT Status*. As of the end of the work day on November 22, 2013 the following GCPT locations have been completed, or at least attempted with upper level rock refusal.

- GCPT 4-1, 4-2
- GCPT 5-1, 5-2, 5-3, 5-4
- GCPT 6-1 (also PVC-36), 6-2, 6-3, 6-4, 6-5
- GCPT 7-1, 7-2, 7-3
- GCPT 8-1
- GCPT 9-1, 9-2, 9-3
- GCPT 10-1, 10-2, 10-3, 10-4
- GCPT 11-1, 11-2, 11-3, 11-4
- GCPT 12-1, 12-2, 12-3, 12-4, 12-5, 12-6
- GCPT 13-1, 13-2, 13-3, 13-4, 13-5, 13-6, 13-7
- GCPT 14-1, 14-2, 14-3, 14-4, 14-5, 14-6, 14-7

- GCPT 15-4, 15-5, 15-6, 15-7, 15-8
- PVC-25, 28B, 36 (also GCPT 6-1)
- WL-108, 111, 119

There have been some soundings that have not proceeded to the desired depth due to construction and demolition debris obstructions. Therefore, it is requested that the Work Plan be amended to allow a trial procedure in which a sonic rig would be used to advance the initial 10 feet of boring, and the hole would be backfilled with sand. The spoils from the sonic rig will be handled in accordance with the procedure set forth in the Work Plan. Use of the sonic rig in these locations where refusal was encountered would allow the GCPT rig to progress through the construction and demolition debris (which is typically in the first 10 feet), then progress further to the desired depth to complete the gamma analysis. We would propose to utilize this procedure as a pilot test. If this procedure does not work, then the full depth of the GCPT location would have to be bored by the sonic rig, as detailed in the November 15, 2013 *Core Sampling (Phase 2) Work Plan* (hereinafter referred to as the Phase 2 Work Plan).

Please note that this is an early progress report provided in response to EPA's request. This data is preliminary and uncorrelated and is subject to change upon further quality control checks. A full report will be authored once the Phase 1 investigation is completed, and the correlations will be completed upon securing the analytical isotope data as described in the Phase 2 Work Plan.

If you have any questions, please feel free to contact me at (217) 483-3118 or Bridgeton Landfill's Environmental Manager Brian Power at (314) 744-8165.

Sincerely,



Daniel R. Feezor, P.E.  
**Feezor Engineering, Inc.**  
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Attachment: Drawing entitled - *GCPT Status*

cc Dan Gravatt, USEPA Region 7  
Ron Hammerschmidt, USEPA Region 7  
Audrey Asher, USEPA Region 7  
Jeff Field, USEPA Region 7  
Shawn Muenks, MDNR Federal Facilities  
Branden Doster, MDNR Federal Facilities